DEVELOPMENTS IN THE KYABRAM DAIRY SYSTEM

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Dairy production on irrigated farms in northern Victoria is based on spring calving herds grazing pasture with minimal supplementation. This system is not suited to calving in other seasons when milk prices are higher. Maize silage, although deficient in nitrogen (N), is high in starch whereas clover pasture is high in rumen degradable N. Therefore, clover pastures supplemented with maize silage should provide a balanced ration for year-round milk production.

This hypothesis was tested using three groups each of nine cows, 36 days post-partum and weighing 523 kg. All cows were fed a feedlot ration (26.0g N/kg DM) consisting of crushed wheat (0.40), maize silage (0.23), lucerne hay (0.20), cottonseed meal (0.15) plus minerals and sodium bicarbonate for two weeks. For the next 14 weeks, two groups grazed subclover-dominant pastures (34.0g N/kg DM) for either two or six hours per day and were then offered maize silage (10.8g N/kg DM) ad lib in yards overnight, while the third group was fed the feedlot (FL) ration in yards; between weeks 12 and 14, both pasture-fed'groups grazed for 6 h. Intakes of pasture were measured from pre- and post-grazing pasture availabilies. Daily intakes of the silage and feedlot ration, yields of fat corrected milk (FCM) and weeklychanges in liveweight were monitored. Yields of FCM were covariate corrected and parity of cows was accounted for in the statistical analyses presented in Table 1.

TABLE 1. Feed intakes and production over 14 weeks from cows grazing clover pastures for 2 and 6 hours per dayor fed a feedlot (FL) ration.

	2h	6h	FL	SEM
Pasture DM intake (kg/day)	4.3	7.6	-	-
Maize silage DM intake (kg/day)	11.7	9.8	-	-
Feedlot ration DM intake (kg/day)	-	-	21.8	-
Liveweight change (kg/day)	-0.63c	-0.26b	0.13a	0.07
Fat corrected milk yield (kg/day)				
weeks 4-7	20.9c	23.1b	25.5a	0.7
weeks 8-11	20.3b	22.0ab	23.3a	0.9
weeks 12-14	21.0a	20.9a	21.7a	1.3

Results on same line followed by common letter do not differ ($P<0.05$)

Cows grazing for 2h consumed 16.0kg total DM whereas cows grazing for 6h consumed 17.4 kg DM/day. There were significant effects of grazing time on liveweight change, but only on FCM yields between weeks4 to 7. The lotfed cows consumed more DM and produced more FCM but were also gaining in weight. However by the time the cows reached their fourth month of lactation, FCM yields of grazing and lotfed cows were similar.

With clover-based pastures, cows can consume 0.70 of their diet DM as maize silage with little effect on milk yields. The Kyabram Dairy System seeks to utilize the high nutritive value of clover pastures plus the high DM yields of forage maize with cows able to graze for as little as two hours each day.

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